

CHAPTER I
INTRODUCTION

A. HISTORY AND PRESENT SITUATION

The history of the development of bulletins dealing with policies governing the design of PWSSs in Kansas was reviewed in 1984 (1). The most recent bulletin was published in 1984 (2). Earlier versions were published in 1953, 1957, and 1967.

The 1986 Amendments to the federal Safe Drinking Water Act created a whole new set of constraints for the design engineer and dramatically affected the relevance of the 1984 bulletin. KDHE decided to revise the bulletin due to concerns about incorporating new technology and the obsolescence of portions of its design criteria.

B. STATUTORY AUTHORITY AND CHARGE

KSA 65-171h authorizes and empowers the Secretary of KDHE "to develop, assemble, compile, approve and publish minimum standards of design, construction, and maintenance of sanitary water and sewage systems" and further states that the Secretary shall "publish and make available such approved minimum standards to municipalities, communities and citizens of this state." KSA 65-162a(b) defines a public water supply system as "a system for the provision to the public of piped water for human consumption, if such system has at least ten (10) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. Such term includes any source, treatment, storage, or distribution facilities."

Public water systems can be publicly or privately owned and are subdivided for regulatory purposes into two major categories: community and non-community systems. KAR 28-15-11 defines a non-community water supply system as one which is not a community water supply system or one that serves water to non-resident populations. Non-community water systems are further divided into non-transient non-community systems (serves the same non-resident population such as schools and factories) and transient non-community (serves a different non-resident population such as highway rest-stops, restaurants, and motels). KAR 28-15-11 defines a non-transient non-community water supply system as one that is not a community water supply system and that regularly serves at least 25 of the same persons over six months per year.

C. PURPOSE AND INTENT

The purpose of this bulletin is to identify KDHE policies and criteria (guidelines and standards) for the design of Kansas PWSSs by water supply professionals. It is KDHE's intent that the bulletin will allow designers maximum freedom consistent with modern water supply practices. The policy statements are

derived from state statutes and regulations which reflect KDHE's responsibilities to users of water produced in Kansas PWSSs.

The design criteria stated herein consists mainly of principles and requirements which have been in use over a long period of time in water supplies found in the State of Kansas. Their purpose is to provide guidelines and standards to those engaged in the design of new facilities and the upgrading of existing public water supply systems. The precise formulation of many of the principles and requirements in this bulletin were derived from *Recommended Standards for Water Works - Policies for the Review and Approval of Plans and Specifications for Public Water Supplies*, a report of the committee of the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers (1992 Edition) commonly referred to as the "Ten State Standards" (3). Also, there are numerous references to specific standards developed by the AWWA (4). All references in this bulletin to specific AWWA standards are to the most current version of the referenced standard.

It is intended that designers using the criteria in this bulletin retain a maximum degree of design freedom since it is recognized that each water supply system is a unique entity and that certain changes to these criteria may be necessary to meet local conditions and unusual circumstances. Terms such as "should" or "recommended" indicate desirable guidelines with deviations subject to site specific considerations. On the other hand, the terms "shall" and "must" are used where practice is standardized to permit specific delineation of requirements or where safeguarding of the public health justifies definite action. Even the terms "shall" and "must" are not absolutes in that KDHE may grant an exception to these requirements under certain circumstances. Also, it is not possible to include design criteria for recently developed processes, methods, chemicals, and equipment although these developments may be acceptable to KDHE.

D. ORGANIZATION AND USE

This bulletin covers administrative procedures and general design considerations along with a review of specific design guidelines and standards. Future revisions will be made by providing dated, loose-leaf corrections and supplements to bulletin users.

Chapters I and II include an introduction to the design bulletin, Kansas statutes, regulations, procedures, required reports, and plans and specifications for PWSS projects. This portion of the bulletin is intended to provide project managers and engineers with an awareness and an understanding

of the administrative aspects of a PWSS project. Chapters IV through VIII include the recommended and required design criteria for each phase of a PWSS. These are source development, treatment, storage, pumping, and distribution. General facility considerations (Chapter III) are included in the bulletin as a prelude to the design chapters and the bulletin concludes with a consideration of chemical storage, handling and applications' requirements (Chapter IX). Detailed material addressing specific subject areas are included in the appendices to this bulletin.

The use of the following administrative procedures and design criteria will be most effective when implemented by a licensed professional engineer experienced in water works design. Further, subject to certain limited exceptions, KSA 74-7001 et seq requires the use of licensed professional engineers for services or work constituting the practice of engineering. Therefore, KDHE strongly recommends that a water supplier contract with a licensed professional to assist them in preparing P&S for any anticipated project. Any attempt to avoid their use may compromise the technical requirements of the PWSS design and may result in less than adequate facilities.

E. LAWS AND REGULATIONS

A listing of titles to selected Kansas statutes and regulations pertaining to PWSSs are provided in Appendix A. Regulations are identified under their specific governing statute. Copies of current Kansas statutes and regulations pertaining to PWSSs may be obtained from KDHE.

F. OTHER RESOURCES

This bulletin will reference other resources which are related to the specific subject matter within the bulletin and which are generally available from state agencies dealing with these concerns. It should be recognized that most of these agencies have compiled lists of publications which can be obtained and used to identify additional information about cities, policies, reviews, strategies, surveys, water resources, etc., eg, KGS has a *Catalogue of Publications* (5) which includes a listing of several water related resources such as maps, data bases, computer programs, and various reports. In addition, AWWA distributes annually a *Publications Catalogue* that includes publications covering numerous aspects of the design of water treatment and distribution systems (6). Also, two major references are available on water treatment plant design (7,8).

